INITIATING A COLLABORATIVE RESEARCH AND DEVELOPMENT PROGRAM BETWEEN THE DEPARTMENT OF VETERANS AFFAIRS AND THE NATIONAL CANCER INSTITUTE

On:

ACCTT: ADVANCING CANCER CARE THROUGH TECHNOLOGY

A PROPOSAL FROM THE TELEMEDICINE STRATEGIC HEALTH CARE GROUP, THE VISN 8 COMMUNITY CARE COORDINATION SERVICE AND THE UNIVERSITY OF FLORIDA

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ADVANCING CANCER CARE THROUGH TECHNOLOGY

Aims of the program

The Veterans Health Administration[i] (VHA), building on its experience with the use of technology in home care (Telehomecare) is in a unique position to test the use of Telehomecare with cancer patients. We propose a collaboration between the VHA, the National Cancer Institute (NCI) and the National Institute of Standards and Technology (NIST) to develop and test an evidence-based model for home-telehealth with cancer patients. We call this proposed one-year project: Advancing Cancer Care Through Technology (ACCTT). Specifically, we will:

1. Establish an ACCTT Steering Committee to guide the project.
2. Develop a *Model for Telehomecare for Cancer Patients* through focus groups with expert panels, and through an exhaustive literature review
3. Test the *Model* with more than 500 cancer patients through the ongoing VHA Telehomecare demonstration program and develop decision support tools for cancer patients using Telehomecare.
4. Report on the ACCTT outcomes. Specifically, this action will link the ACCTT program to the VHA's quality initiatives, the NCI, and NIST to provide methodologies and avenues to disseminate ACCTT to other health care organizations in both the private and federal sectors
5. Building on the results of the ACCTT project, develop a proposal for a randomized clinical trial of Telehomecare with cancer patients.

Specific Objectives

1. Develop an ACCTT Steering Committee with membership from both VHA and the NCI to provide for all levels of expertise in planning for the care of cancer patients.

2. Develop a *Model for Telehomecare for Cancer Patients,* that addresses issues from diagnosis/first presentation through to the end need or end of life, including inclusion and exclusion criteria for cancer patients, focus of interventions, patient safety, criteria and methods for evaluating outcomes and develop decision support tools for cancer patients using Telehomecare:

    (a) Hold focus groups with experts in cancer care and Telehomecare, including oncologists, home health personnel, and computer / remote monitoring technologies
    (b) Conduct an exhaustive review of the literature on home-based cancer care, and on tele-health
    (c) Utilize routine, national VHA data sets and extractions to identify diagnostic, therapeutic, care and treatment elements that could be met using a Telehomecare approach

3. Test the *Model* with more than 500 cancer patients through the ongoing VHA Telehomecare demonstration program.

[i] The Veterans Health Administration is part of the Department of Veterans Affairs

(a) Develop standardized protocol for use of Telehomecare from the Model
(b) Train personnel in the VHA Telehomecare demonstration program in the application of the standardized protocol with cancer patients
(c) Implement the Model with a minimum of 500 patients
(d) Conduct pre-intervention and 6-month follow-up tests of outcomes identified in Objective 2.

4. Report on outcomes.

(a) Link the ACCTT program to the VHA's quality initiatives, the NCI, and NIST to provide methodologies and avenues to disseminate ACCTT to other health care organizations in both the private and federal sectors
(b) Prepare and submit a manuscript to a peer reviewed journal

5. Building on the results of the ACCTT project, develop a proposal for a randomized clinical trial of Telehomecare with cancer patients.

(a) Prepare an R01 proposal for submission to NIH

Background

Cancer is the second leading cause of death in the U.S[1]. The 1998 incidence rate[2] for all cancers in the US population was 471 per 100,000. Given this incidence rate and the aging of the US population, the total number of cancer cases is expected to double by 2050[3]. Eighty percent of cancers occur in people over the age of 55[3]. The relative 5-year survival rate for all cancers is 62%[(2)]. Therefore, the number of elders with cancer will rise to a level requiring extra services and clinicians. These events will challenge health care organizations and policy makers to provide accessible, cost-effective services for cancer survivors as well as decision support to these people. VHA is an integrated health care system. In 2001, 4,247,204 veterans relied, in total or in part, on the VHA for their health care services[4].

Table 1. Projected Changes in the Demographics of Veteran Population 2000-2010[5]

Population group	2000 in millions	2010 in millions	% Change
Veterans over 65 years	9.3	8.5	-9
Veterans over 75 years	4.0	4.5	+12
Veterans over 85 years	0.422	1.3	+300

The changing health care needs of older veterans are representative of the US older population in general. Table 1 lists the current and projected age composition of veterans eligible for VHA services. Since 1996 the VHA has undergone significant change, with a transition away from hospital based care toward ambulatory care[6]. At the same time, the advent of telemedicine and

telehealth technologies that enable the provision of health care when patients and practitioners are physically remote from one another[7], has been embraced by the VHA to facilitate the focus of care at the patient's home (Telehomecare). An internal VHA meeting in April 2002 produced consensus recommendations supporting the use of telehealth technologies to care for veteran patients with chronic diseases at home[8]. These recommendations for expanding the use of home-telehealth are congruent with the Institute of Medicine (IOM) report, *Crossing the Quality Chasm*[9], which recommends radical changes in the US health care system to improve quality of care. The IOM report[9] delineates three mechanisms that are necessary to achieve quality improvement:

1) Strategic use of information and communication technologies;
2) Patient-centered care
3) Coordination of care is a mechanism to achieve this quality improvement.

The VHA is singled out in this IOM report as being one of the most advanced systems of care, due in large part to their computerized patient record and attention to outcomes research. The VHA is also a world leader in the use of telemedicine[10] and has placed particular emphasis on Telehomecare. There is preliminary evidence from the VHA experience that Telehomecare is cost-effective, results in high quality service, and that patients indicate high levels of satisfaction with the use of this technology[10,11,12]. Telehomecare promises to be an effective way of meeting the health needs of patients with chronic health conditions[11, 12].

The VHA is structured into integrated service networks that assist veterans within geographical regions throughout the United States. The Veterans Integrated Service Network 8 (VISN-8, which includes Florida, Puerto Rico, and South Georgia) developed a large home-telehealth program in 2000. The VISN-8 Community Care Coordination Service (CCCS) has a unique Telehomecare platform currently providing care to 1500 patients at home, with a projected increase to 3,000 during 2003. Patient care is being provided using a standardized approach to care that relies on the concept of care coordination (see Appendix B). The VISN-8 CCCS Telehomecare program is regarded as a model, as other providers begin to embrace telehealth.

Telehomecare has been used with mixed success in end of life care[13]. Telehomecare studies to date have supported small numbers of patients (15-75) at home. The VHA experience suggests that the benefits of Telehomecare will be derived from large Telehomecare networks. Important steps in developing a Telehomecare program include[14]:

1. Identifying patient needs
2. Delineate the clinical processes to meet the identified patient needs;
3. Define appropriate telehealth technologies to supports the clinical processes;
4. Develop the management support and business plan for a robust and sustainable service.

The VHA has developed guidelines, program evaluation tools[15], policies for credentialing and privileging[16], and informed consent for telemedicine[17]. The VHA in general, and the VISN-8 CCCS in particular, is in a unique position to build on its Telehomecare resource a demonstration to test the use home-telehealth technologies for the care of cancer patients. We propose a collaboration of the VHA with the NCI to develop an evidence-based model for Telehomecare with cancer patients, exploring the following issues:

1. The care of cancer as a chronic condition
2. Providing information to patients to enable them to make shared decisions with practitioners

3. Establishing the home as the preferred place of care for patients who are living with cancer as a chronic condition

Participants In The ACTT Project (See Appendix D for VHA Participants)

1. VISN 8 Community Care Coordination Service (Marlis Meyer and Patricia Ryan)
   The ACCTT project will build on VISN 8's successful and highly regarded tele-homecare program (CCCS), initiated 2 years ago (See Appendix B and C). The CCCS has served over 1,500 patients through home-telehealth over the past two years, and will serve an additional 1500 in the next 2 years. Over half of these patients have cancer. The CCCS includes 15 demonstrations in sites across Florida, North Georgia, and Puerto Rico, using several different technology strategies, including computer based video teleconferencing, Health Buddy and telephone. With several different technologies employed throughout the CCCS, we will be able to explore the optimal technology for cancer patients with different profiles (demographics, literacy, impact of cancer on functional status, etc.).

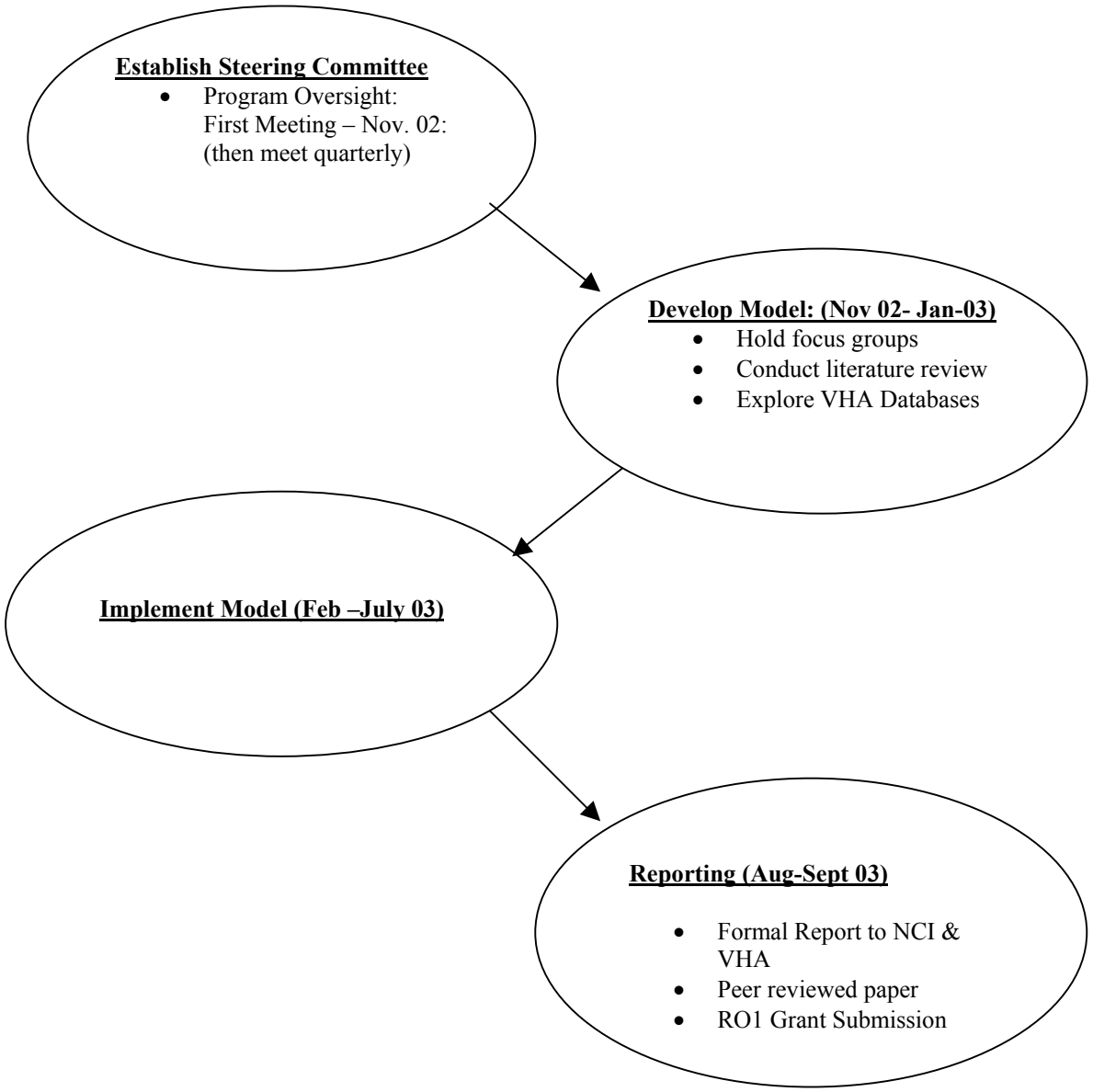
2. The VHA Telemedicine Strategic Healthcare Group (Adam Darkins)
   The VHA's Telemedicine Strategic Health Care Group (SHG) is the national coordinating group that oversees the development of telemedicine in the VHA. It is responsible for providing the VHA Undersecretary for Health's Office with advice on policy relating to telemedicine/telehealth. The Telemedicine SHG also helps coordinate the development of national policies and guidelines relating to telemedicine/telehealth

3. The University of Florida, Rehabilitation Engineering Research Center on Technology for Successful Aging (RERC-Tech Aging) (William Mann and Neale Chumbler)
   Funded by the National Institute on Disability and Rehabilitation Research ($4.5 million from October, 2001 through September 2006), the RERC-Tech Aging conducts research and development in the area of home monitoring and communications technology for frail elders. The RERC-Tech Aging works closely with the VISN 8 CCCS, as well as major corporate partners (e.g. Motorola, Honeywell, Phillips Medical) The RERC-Tech Aging Director and one of the Principal Investigators hold appointments both at the University of Florida and the VHA. Chumbler is the principal investigator of one of the four research projects, "Remote home health monitoring: Effectiveness with rural living elders", of the RERC. The major objective of this endeavor is to evaluate whether telehomecare use in the older veterans' homes improves the functional and cognitive outcomes as compared to a control group of non-veterans. Both veteran and non-veteran samples were matched in terms of gender, age, race, and marital status.

4. The National Cancer Institute
   We propose that the NCI play an active role in the ACCTT project, both in terms of funding, and in hands-on project planning and oversight:
   a. Four members of ACCTT Steering Committee will be from the NCI
   b. Selection of members of expert panels for focus groups.

5. National Institute for Standards and Technology (NIST)
Telehomecare promises to become a major component health care delivery. Participation of NIST in development of technical standards will help ensure appropriate technology is employed.

FIGURE 1: ACCTT PROPOSED PROJECT MODEL AND TIMELINE



Program time frame (Assuming November 1, 2002 start)

1. November 2002– January 2003
    a. Establish Steering Committee, hold first meeting for review of program strategy, prioritizations, collaborations
    b. Consultations between VISN 8 CCCS, NCI and University of Florida RERC-Tech Aging to develop initial methodologies
    c. Literature review
    d. Focus groups
    e. Integrate results of a-c (above) into *Model for Telehomecare for Cancer Patients*

2. February – July 2003
    a. Implement *Model for Telehomecare for Cancer Patients* at VISN 8 CCCS
    b. Collect pre-and post intervention data

3. August- September 2003
    a. Review outcomes of implementation of *Model*
    b. Report outcomes with recommendations for enhancements to the *Model*
    c. Prepare RO1 grant – Randomized clinical trail testing the standardized protocol used in implementing the *Model for Telehomecare for Cancer Patients*

Methods

This project will provide preliminary data to support a future randomized clinical trial. In addition to the pre-post design, with a minimum of 500 patients to be studied over 6 months, we will employ a matched case comparison. Each patient in the VISN-8 CCCS will be matched on age, sex, diagnosis, health status and functional status with a veteran not enrolled in VISN-8 CCCS to compare outcomes over 6 months. This methodological approach is currently being performed by two of the principals (Chumbler and Mann) in a program evaluation of the efficacy of the CCCS. For a description of the care coordination process see Appendix B.

VISN-8 CCCS Program Sites

Community Care Coordination Service Program Overview
The VISN 8 Community Care Coordination Service has been operational since October 1, 1999. The Service is a care management system that combines care coordination and the use of technology to serve a variety of veteran populations that are high risk, high use, and high cost. This group represents less than 4% of the veterans served in the Network, however they consume more than 40% of the medical care dollars spent.

The purpose of the Service is to help veterans receive the appropriate clinical care across the VHA continuum and prevent inappropriate institutionalization. The mission is to provide the right care, in the right place at the right time. Care coordinators serve as the liaison between interdisciplinary care teams, primary providers, patients, and caregivers encouraging earlier considerations of the home as the site of care. To facilitate this early home placement, six levels of Telehealth technology are currently used in nine demonstration projects. These tools assist the

care coordinators by monitoring the health status and well being of the patients. These interactive systems include videophones, telemonitoring devices, the Health Buddy, an in-home messaging device, a P C Web-based interactive system, specialized Polaroid cameras for wound care follow-up, and the telephone.

Patient enrollment in to the CCCS program began on 4/1/00 and as of 7/02, in excess of 1500 patients that have entered the program.

Clinical Demonstration Pilots
Below is a summary of the nine demonstration projects currently funded within the Network representing urban, rural and satellite clinic settings and focus on mental health, medical and frail older adults.

Lake City: The Rural Home Care program coordinates the care for frail older adults with complex medical health problems and primary diagnoses of C O P D, Cancer, O H D and Diabetes. Care Coordinators are using two types of technology, in-home messaging (the Health Hero Buddy Systems) and telemonitoring, have 300 veterans enrolled. Partnerships have been developed with area Assisted Living Facilities and the state Veteran's Domiciliary. Eighty veterans are being followed in the State Domiciliary utilizing 1 telemonitoring unit.

Gainesville / Lake City: Veterans Video Network (V V N): This program specializes in a P T S D and Schizophrenia populations, using personal computers, video-conferencing and video-phones to provide therapeutic interventions through e-mail and chat rooms.

Gainesville: Diabetic Limb Preservation (D L P): D L P coordinates and provides a full day of on-site clinic assessment and health teaching to a population requiring lower limb wound care. Instead of paying for 2x/day skilled nursing visits, veterans and caregivers are taught the treatment routine and given a special focus camera. Veterans and the caregivers are taught how to photograph the healing wounds, which are mailed to the Care Coordinator for follow-up phone care. Through this coordinated care and systematic monitoring of the healing process, over 38 amputations already scheduled have been diverted and over 300 patients have been enrolled.

Ft. Myers: This satellite clinic program serves complex frail medical patients with diagnostic categories of C H F, C O P D, Cancer and Diabetes. Telemonitors, videophones and in-home messaging units are used as technology assists. Currently over 150 patients are enrolled.

Miami: The T-care program focuses on frail older adults with complex medical problems similar to other programs. They are managing their current census of 170 patients using videophones and in-home messaging devices.

San Juan: This is both an urban and rural Diabetic program that uses telemonitors and in-home messaging devices. Some of their 180+ currently enrolled patients live hours away from access to any health care. Through the use of the Telehealth tools these patients are now getting their needs met in a very timely way. An additional population of spinal cord injury (SCI) patients is enrolled (60+) in the program and following the same protocols as the D L P wound care program or Diabetes, using cameras, telemonitors and in-home messaging devices.

West Palm Beach: This mental health program recently began enrolling patients and will use the in-home messaging device.

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